

AUSTIN CLIMATE SUMMARY

The climate of Austin is humid subtropical with hot summers and relatively mild Winters. Austin, the capital of Texas, is located at the junction of the Colorado River and the Balcones escarpment, separating the Texas Hill Country from the Blackland Prairies to the east. Elevations within the city vary from 400 feet to just above 1000 feet above sea level. Native trees include cedar oak, walnut, mesquite and pecan.

During winter, the area is alternately influenced by a continental regime, with winds from the north and west, and by a modified maritime regime, with south and southeast winds from the Gulf of Mexico. Mild weather prevails during most of the winter. Sub-freezing temperatures occur on average about 25 days each year. North winds with strong cold fronts block any moderating affects from the Gulf of Mexico, and occasionally usher in frigid conditions to central Texas. The **coldest low for Austin Mabry was -2 on January 31, 1949 and for Austin Bergstrom -5 on January 31, 1949.** Although daytime highs are restrained in cloudy winters, overnight lows can be potentially higher, sometimes preventing the area from the much colder minimums that come under clear skies. In these patterns, the coolest monthly average temperatures may follow, because daytime highs are limited by the cloud cover. On sunny winter days, the temperature warms to pleasant levels, while nights are cooler. Very warm days occur when dry west winds in a mild airmass allow winter temperatures to climb to spring or summerlike levels, such as **90 on December 25, 1955; 90 on January 30, 1971; and 99 on February 21, 1996.**

Daytime temperatures in summer are hot, with highs over 90 about 80 percent or more of the time. Cool fronts may affect the area and drop overnight lows to the 50s on some occasions. In these cases, warm winds quickly return, pushing lows to the 70s in a few days. In very hot summers, the continental regime of West and North Texas can have an impact of keeping daytime highs near and above 100, especially with hot west and southwest winds. Most of the time, the moderating affects of the Gulf of Mexico limit daytime highs; however, they also add to the discomfort with higher humidity. Sometimes, when weak fronts that have lost most of their cool air properties and move through the area, warmer than normal daytime highs follow, as the area is blocked from the moderating affects of the Gulf of Mexico. The **highest temperature of record at Austin Mabry was 112 on September 5, 2000 and August 28, 2011. The highest temperature of record at Austin Bergstrom was 112 on September 5, 2000.**

Precipitation is fairly evenly distributed throughout the year with heaviest amounts occurring in May and September, primarily because of tropical cyclones that migrate out of the Gulf of Mexico, or stalled out cool fronts. Precipitation from April through September usually results from thunderstorms, with large amounts of rain falling within short periods of time. Rainfall amounts have exceeded 5 inches in several hours, causing flash floods. While thunderstorms and heavy rains may occur in all months of the year, most of the winter precipitation consists of light rain. Although snow is not a significant source of moisture, it does visit the area during some winters. Average yearly rainfall is near 33 inches. Extremes at Austin Mabry, since 1856, vary from **11.52 inches** in 1954 to

64.68 inches in 1919. At Austin Bergstrom the extremes, since 1943, vary from **9.98 inches** in 1954 to **55.74 inches** in 1957.

Prevailing winds are southerly; however, in winter, northerly winds are about as frequent as those from the south.

Average sunshine varies from about 50 percent in the winter to near 75 percent in the summer. Stratus clouds frequently develop at night during all seasons with south and southeast winds, as Gulf moisture is lifted from the coastal plains to the higher terrain over the Balcones escarpment. On some days, these clouds do not dissipate, hanging in all day, with few or no late afternoon/early evening breaks. In the winter, these stratus clouds may be accompanied by fog and drizzle, as south and southeast wind brings Gulf moisture over the top of a cool air dome at the surface. In some years, when very cloudy conditions prevail, even if these clouds break up, mostly cloudy skies linger due to a dense high deck of cirrus caused by Pacific moisture over Texas from an active subtropical jet stream.

The average occurrence of the last temperature of 32 degrees in spring is early March and the average first fall occurrence of 32 degrees is late November. The extremes vary from 31 October 26, 1924 to 32 April 9, 1914.

Strong winds come from microbursts, squall lines, strong cold fronts and dissipating tropical storms, that move inland from the Gulf of Mexico. Dissipating tropical storms affect the city with not only strong winds, also heavy rains. Although tornadoes are rare, they have occurred, and they have most often been associated with the dissipating tropical storms.

Explanatory note about Austin Climate sites:

With the opening of Austin Bergstrom International Airport in May 1999, there are two sets of Local Climatological Data (LCD) maintained for Austin, Texas. As a user of National Climate Data Center products, you should be aware of the history of the data sets; in addition, you should know where and how these climatological data records are kept for the two Austin area weather observation sites.

Austin City/Camp Mabry (Texas National Guard) (Identifier ATT)

The Local Climatological Data for this site is based on weather records started back in the 1800s in the downtown Austin area. This National Weather Service first order data set was moved 3 miles northeast of the downtown area with the opening of Austin Robert Mueller Municipal Airport in the 1940s and continued until the closure of the Robert Mueller Airport on May 23, 1999. The National Weather Service ASOS was left without human augmentation effective with the closure of the airport. The National Weather Service held discussions with local users about finding a comparable location (geography and elevation) to maintain this "in city" climate data set. With cooperation of Texas National Guard officials, the National Weather Service moved the ASOS (no human augmentation) to Camp Mabry on July 21, 1999. This location, which is very similar to the former airport site.

Austin Bergstrom International Airport (Identifier AUS)

The Local Climatological Data for this site is based upon U.S. Air Force weather records taken at Bergstrom Air Force Base (formerly occupying this site) for the time period 1942 through 1995. With base conversion to civilian use, Austin Bergstrom International Airport was opened to cargo operations on September 1, 1997, with resumption of manual surface weather observations. On October 2, 1997, an ASOS was commissioned at this airport. Austin Bergstrom International Airport was opened to full civilian operations (with full human augmentation as FAA Service Level "A" weather observations) on May 23, 1999. This weather observation site is located in the Onion Creek watershed. Because the location is in a more outlying and lowlying area, nighttime temperatures (especially during calm wind conditions during the winter time of the year) tend to be considerably cooler than the Austin City/Camp Mabry (Texas National Guard) weather observation site.

As a NCDC Local Climatological data user, you should be aware of these 1999 changes and how it affects the choice of which Local Climatological Data set you use for Austin, Texas.

The history of Austin Climate Locations is listed below.

History of Austin Climate Station Locations

1854 to 1883

Cooperative Weather Observers

Various locations throughout the city of Austin. Specific locations unknown.

1883 to October 1926

Cooperative Weather Station

Engineering Bldg. at The Univ. of Texas at Austin

October 1926 to October 1936

Weather Bureau Office

Littlefield Bldg., Room 901

6th and Congress

October 1936 to February 1942

Weather Bureau Office

Federal Court Bldg.

200 W. 8th Street

February 1942 to August 1942
Weather Bureau Office
Littlefield Bldg., Room 901
6th and Congress

August 1942 to July 1999
National Weather Service
Austin Robert Mueller Airport

July 1999 to Present
National Weather Service
Camp Mabry and Austin/Bergstrom Airport